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Educational games: do they make a difference?

Samir Najdi ^{a *}, Randa El Sheikh ^b^a *Alquds Open University, Ashmun sedeq st, Jerusalem P.O.Box 5800, East Jerusalem, Palestine*^b *Alquds Open University, alsewana St, Jerusalem P.O.Box 17160, East Jerusalem, Palestine*

Abstract

(Traditional, computerized, riddles and puzzles) on the This study aimed at exploring the importance of educational games students' attitudes toward learning chemistry, from the point view of the students in the preparatory classrooms. The study group a one educational game. After the completion of the study, consisted of three samples; each sample learned one subject using after using educational questionnaire was distributed among the samples to determine their attitudes toward learning chemistry games. The results of the study revealed a positive attitude toward learning chemistry after using educational games. In light of the results the researchers recommend the introduction of different kinds of educational games in teaching chemistry for its importance in creating positive attitudes towards the material, and to carry out this study on a larger sample and various instructional areas.

Keywords: Educational Games, Students' Attitudes.

Introduction

Educational games are meaningful activities which include certain acts followed by a certain rules carried out by the teacher in order to serve the emotional and educational cognitive goals (Abu blame: 2002, p. 11). They are designed to assist students in learning a skill as they play, also help improve their thinking, creativity and increase the ability to retain information (Becta: 2001, Najdi: 2010).

Scientists believe that educational games can unlock the students thinking and increase the feeling of fun while learning, therefore reduce the burden of delivered information given by the teachers (Habib :2002, Abu Raya:2001). They also sustain and motivate students interest in learning (Akinsola :2007)

In this paper, educational games will be limited to three forms which are; traditional games, computerized games and riddles games.

*Najdi's. Tel.: 00972505641140
E-mail address: snajdi@qou.edu

The Significance of the Study

The idea of the current search came from complaints we constantly hear among school teachers and parents from the current teaching methods which do not evoke the love of students, leading to low quality of learning, and the formation of negative trends. Hence this study aimed at demonstrating the importance of educational games in presenting the aspects of fun and entertainment in learning, and thus in building positive trends toward learning chemistry.

To achieve the objectives of the study, this question was presented: What is the effect of educational games on the attitudes of the students towards learning chemistry?

Methodology

The researchers followed the descriptive method, which relies on the description of the phenomenon under study in the light of data that is collected by the study tools.

Three Jerusalem schools were selected, the cooperation, and the availability of modern computer in one of the schools was necessary.

Three 8th grad classes, one from each school, total of 85 students were selected; students of these classes were tested for equivalence in achievements, means, and standard deviation.

A science unit that deals with Physical Properties and Periodic Table, was carefully selected to be taught throughout the experiment, and was approved by three educational experts. The teaching tools of educational games (Traditional, computerized, riddles and puzzles) were prepared and approved by a group of educators and technologists to ensure the authenticity of the content and suitability for students.

An attitude questionnaire consists of 22 Likert Scale questions, was built by the researchers to measure the students' attitudes toward learning chemistry. The validity and reliability of their questionnaire was tested and found to be suitable for the purposes of this study.

The students sample was distributed as shown:

Table1: Students Sample Distribution

Class No	School	No of student	Type of Educational Games
1	A	25	Traditional games based on flash cards, Memory game, Hands-on activities such as cutting and pasting, coloring, and making models were implemented to teach the arrangement of the periodic table and the composition of compounds.
2	B	27	computerized games, Ex; http://www.funbrain.com/cgi-bin/pt.cgi?A1=s&A2=1&ACOMMON=1&submit=Play+Proton+Don http://www.sheppardsoftware.com/Elementsgames.htm
3	C	33	Riddles and Puzzles. Ex: Choose several objects. Keep them hidden out of view of the students. Describe each one using its physical properties as you observe the object inside a paper bag. Allow students to guess what each object is as you described.

The application time of the study was 3 weeks, and 15 periods

After the completion of the experiment, the attitude questionnaire was distributed among the students. A Likert Scale was used to measure whether the student agrees or disagrees with the question. (5=strongly disagree, 4=agree, 3=not sure, 2=disagree, and 1=strongly disagree).

The results were analyzed using the SPSS program (appendix 1), averages and standard deviations of each question were calculated.

Result and Discussion

The results showed that 13 questionnaire questions out of the 22 explored highly the importance of learning science (chemistry) using educational games on the attitudes of students, the average of 7 other questions were moderate, only two questions showed fair impact of educational games on the attitude of learning chemistry. These results are in line with the Najdi's and Akinsola's results on a similar studies.

Moreover, results also indicated the influence of educational games to ease the atmosphere of dread that accompanies the science class and creating an atmosphere of fun, comfort and cooperation between students.

The results also illustrated the power of educational games in building bridges between learning science and other variables such as cooperative learning, development of leadership skills, and respecting the opinions of others. These results are consistent with the results of a study of (Sarhan and Abu Riya).

On the other hand this learning method has not abolished completely the fear felt by the student from learning science, did not rise the desire of the student to request more scientific problems to solve, which could be attributed to the short time of experience and modernity.

Conclusion

This study have provided evidence that educational games are great tool that promote learning skills that today's school curriculum require, they are also able to help students getting the maximum benefit of the learning process, institutions need to recognize the learning characteristics of the students, and their love to play. The results of the study showed the importance of educational game in developing positive attitudes toward learning, and in reducing the amount of tension accompanying the traditional learning presses. Educational game proved to be able to activate students mental capacity, and raise their positive attitude towards learning, which deepens the understanding of the topics learned, moreover transfer the effect of learning to other topics. Thus, it is believed that if educational games are well planned, organized and supervised, can play an active role in building positive attitudes toward learning.

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